## REMARKS

Claims 1, 7 and 9-22 are pending. By this Amendment, claims 1 and 21 are amended and claims 5 and 8 are canceled. Claims 10-20 have previously been withdrawn from further consideration. Support for the amendments to the claims may be found, for example, in the claims as filed and in the specification at paragraphs [0028] and [0088]. No new matter is added.

Entry of the amendments is proper under 37 CFR §1.116 because the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (as the amendments amplify issues previously discussed throughout prosecution); and (c) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

### I. Rejections Under 35 U.S.C. §103

#### A. Sugimoto and Miyazaki

The Office Action rejects claims 1, 5, 7, 8 and 21 under 35 U.S.C. §103(a) over U.S. Patent No. 5,429,846 to Sugimoto et al. ("Sugimoto") in view of U.S. Patent No. 6,599,463 to Miyazaki et al. ("Miyazaki"). By this Amendment, claims 5 and 8 are canceled, thus the rejection is moot as to those claims. As to the remaining claims, Applicants respectfully traverse the rejection.

By this Amendment, claim 1 is directed to an electrode level difference absorbing print paste (hereinafter referred to as "the paste") comprising ceramic powder, a binder resin, a plasticizer and a solvent. The binder resin is a specifically claimed binder resin with

specifically claimed properties, and the binder resin is present in an amount of 3 parts by weight or more and 9 parts by weight or less with respect to 100 parts by weight of the ceramic powder. The solvent is a specifically claimed solvent present in an amount of 20 to 80 parts by weight with respect to 100 parts by weight of the paste. The ceramic powder is present in an amount of 30 to 55 weight percent with respect to the total weight of the paste. The paste has a viscosity of 4 to 30 Pa·s, and the plasticizer is present in an amount of 50 to 100 parts by weight with respect to the binder resin. Applicants respectfully assert that the above combination of features form a print material having excellent mechanical strength and adhesiveness and that Sugimoto and Miyazaki, individually or in combination, fail to teach or suggest each and every feature of the claimed paste.

The Office Action asserts that Sugimoto discloses a ceramic slurry including a ceramic powder, a binder resin, a plasticizer and a solvent, wherein the binder resin contains a polyacetal resin with a polymerization degree of 1700 and a butyralation degree of 65 mole%, and the use of 8 or 9 parts of an acetal resin to 100 parts of ceramic powder. However, the Office Action acknowledges that Sugimoto does not disclose the use of a solvent that is at least one of terpineol, dihydroterpineol, terpinyl acetate, dihydroterpinyl acetate and 4-(1)'-acetoxy-1'-(cyclohexanol acetate), thus the Office Action applies the Miyazaki reference to address the discrepancies of Sugimoto with respect to claim 1. The Office Action asserts that Miyazaki discloses the use of a terpineol solvent in an amount of 35 parts by weight with respect to 100 parts by weight of the ceramic powder. The Office Action cites col. 14, line 63-col. 15, line 2 of Miyazaki to support this assertion. However, Applicants respectfully assert that the above portion of the Miyazaki reference is directed to a conductive paste rather than a ceramic paste.

Miyazaki discloses the use of a ceramic slurry, a conductive paste and a ceramic paste as three separate components used to form the monolithic ceramic electronic component. See

Miyazaki, abstract. Miyazaki further discloses that the conductive paste employed in the monolithic ceramic capacitor includes copper powder, nickel powder or conductive powder containing an alloy of Ag/Pd. Miyazaki, col. 14, lines 58-60. Miyazaki then discloses that the conductive past comprises, "the [conductive] powder (100 parts by weight); an organic binder (about 2-20 parts by weight, preferably about 5-10 parts by weight); a resinate of a metal ... (about 0.1-3 parts by weight, preferably about 0.5-1 parts by weight, as reduced to metal); and an organic solvent (about 35 parts by weight) ...." Miyazaki, col. 14, line 63-col. 15, line 2. Thus, the portion of Miyazaki relied upon by the Office Action as disclosing "a ceramic slurry that uses 35 parts by weight to 100 parts by weight of ceramic powder" references a conductive paste rather than a ceramic paste. See Office Action, page 5 and Miyazaki, col. 14, line 58-col. 15, line 2.

Further, Applicants respectfully submit that the ceramic paste disclosed in Miyazaki requires significantly more solvent than the conductive paste disclosed therein. For example, col. 16 of Miyazaki discloses an example in which a ceramic paste is prepared. This example of Miyazaki discloses the use of 70 parts by weight of methyl ethol ketone, which Miyazaki discloses is an organic solvent, along with 40 parts by weight of terpineol, which is also disclosed by Miyazaki as an organic solvent. See Miyazaki, col. 16, lines 5-15. Thus, this example of Miyazaki requires 110 parts by weight of organic solvent in order to prepare the ceramic paste. Not only is this significantly larger than the 35 parts by weight asserted in the Office Action, but it is also significantly higher than the claimed maximum solvent content of 80 parts by weight. Thus, for at least the above reasons, Applicants respectfully assert that Sugimoto and Miyazaki, individually or in combination, fail to teach or suggest at least the amount of solvent recited in claim 1.

Additionally, by this Amendment, claim 1 recites, *inter alia*, "a content of the plasticizer is 50 to 100 parts by weight with respect to 100 parts by weight of the binder

resin." The Office Action asserts, on page 6, that Miyazaki discloses the use of dioctyl phthalate as a plasticizer in the ratio of 3 parts by weight to 7 parts by weight of polyvinyl butyral (a binder resin). See Miyazaki col. 15, lines 48-50. However, this results in approximately 43 parts by weight of the plasticizer with respect to 100 parts by weight of the binder resin. Thus, the ratio disclosed in Miyazaki is below the claimed minimum of 50 parts by weight of plasticizer with respect to 100 parts by weight of the binder resin. Accordingly, Applicants respectfully assert that Sugimoto and Miyazaki, individually or in combination, also fail to teach or suggest at least this feature of amended claim 1.

Furthermore, the Office Action, on pages 5-6, acknowledges that Sugimoto fails to disclose the viscosity of the paste in a range of 4 to 30 Pa·s at a shear rate of 8[1/s]. However, the Office Action asserts that Sugimoto discloses a viscosity range of 20 to 270 centipoises and that the viscosity should be adjusted according to the intended use. Therefore, the Office Action asserts that it would have been obvious to one of ordinary skill in the art to have optimized the viscosity of the Sugimoto paste to be within the claimed range. However, Applicants respectfully assert that it would not have been obvious to one of ordinary skill in the art to have utilized the claimed viscosity range of 4 to 30 Pa·s at a shear rate of 8[1/s].

In support of the above assertion, Applicants submit Tables 11-20, as attached to this Amendment. Tables 11-20 correspond to Tables 1-10 in the present specification, except that attached Tables 11-20 include three additional columns entitled "Hanging Paste," "Stacking Property (Stacking Precision)" and "Sheet Erosion." The "Hanging Paste" column indicates to what extent the paste hangs over the electrode from the edges. This “hanging paste” phenomenon results when a paste has a viscosity that is too low. In other words, a paste with a low viscosity is unstable, loose, and will not keep its intended figure and, for example, the paste will hang over the edges of the electrode. See specification, paragraph [0136].

Additionally, "Stacking Property (Stacking Precision)" and "Sheet Erosion" also are deteriorated when a paste has a viscosity that is too low. Thus, as is shown in the attached tables, the claimed viscosity range is an important feature that is needed to achieve a paste with optimal properties that would not have been expected by the disclosures of Sugimoto and Miyazaki.

For example, in Table 12, when the viscosity of the paste is below 4 Pa·s at 8[1/s], as in samples 10 and 11, hanging of the paste is present, stacking property (stacking precision) is bad and sheet erosion is present. However, when the viscosity of the paste is within the claimed range, as in samples 12-15, there is no hanging of the paste, the stacking property (stacking precision) is good and there is little sheet erosion. As is also seen in the attached tables, when the viscosity is above the claimed range (i.e., above 30 Pa·s at 8[1/s]), the "Hanging Paste," "Stacking Property (Stacking Precision)" and "Sheet Erosion" are not measurable. Therefore, Applicants respectfully submit that the claimed viscosity range of 4 to 30 Pa·s at 8[1/s] results in an improved paste that would not have been expected by Sugimoto and Miyazaki, individually or in combination at least because neither Sugimoto nor Miyazaki disclose, teach or suggest that the viscosity of the paste should be adjusted to control the features discussed above. Thus, Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to have modified the disclosure of Sugimoto in view of Miyazaki to achieve a paste with the viscosity of the paste as presently claimed. Therefore, Applicants respectfully assert that Sugimoto and Miyazaki, individually or in combination, also fail to teach or suggest at least this feature of amended claim 1.

Additionally, regarding the Restriction Requirement, Applicants respectfully assert that lack of unity of invention does not exist at least because Sugimoto and Miyazaki, individually or in combination, fail to disclose, teach or suggest the special technical features common to the pending claims for at least the reasons stated above.

Claim 1 would not have been rendered obvious by Sugimoto and Miyazaki, individually or in combination. Claims 7, 9, 21 and 22 variously depend from claim 1 and, thus, also would not have been rendered obvious by Sugimoto and Miyazaki, individually or in combination. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**B. Sugimoto, Miyazaki and Suzuki**

The Office Action rejects claims 9 and 22 under 35 U.S.C. §103(a) over Sugimoto in view of Miyazaki and further in view of JP 2002-313672 to Suzuki et al. ("Suzuki"). Applicants respectfully traverse the rejection.

For at least the reasons stated above, Sugimoto and Miyazaki, individually or in combination, fail to teach or suggest each and every feature of amended claim 1. Further, Suzuki is not applied to address the above discrepancies of Sugimoto and Miyazaki as to claim 1. Therefore, Sugimoto, Miyazaki and Suzuki, individually or in combination, fail to teach or suggest each and every feature of amended claim 1.

Claim 1 would not have been rendered obvious by Sugimoto, Miyazaki and Suzuki, individually or in combination. Claims 9 and 22 variously depend from claim 1 and, thus, also would not have been rendered obvious by Sugimoto, Miyazaki and Suzuki, individually or in combination. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

## II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:NAB/mef

Attachment:
Tables 11-20 (4 sheets)

Date: January 28, 2009

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DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

Table 11

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 1 | 1450 | 6 | 30 | 69 | | 50 | Imidazolines | 4 | 0.7 | No | Good (≤ 50 μm) | Little | Easy |
| Sample 2 | 1450 | ↓ | 34 | ↓ | | ↓ | ↓ | 4 | 0.8 | ↓ | ↓ | ↓ | ↓ |
| Sample 3 | 1450 | ↓ | 38 | ↓ | | ↓ | ↓ | 5 | 1.0 | ↓ | ↓ | ↓ | ↓ |
| Sample 4 | 1450 | ↓ | 42 | ↓ | | ↓ | ↓ | 7 | 1.2 | ↓ | ↓ | ↓ | ↓ |
| Sample 5 | 1450 | ↓ | 46 | ↓ | | ↓ | ↓ | 11 | 1.6 | ↓ | ↓ | ↓ | ↓ |
| Sample 6 | 1450 | ↓ | 50 | ↓ | | ↓ | ↓ | 18 | 1.9 | ↓ | ↓ | ↓ | ↓ |
| Sample 7 | 1450 | ↓ | 54 | ↓ | | ↓ | ↓ | 30 | 2.2 | ↓ | ↓ | ↓ | ↓ |
| Sample 8 | 1450 | ↓ | 58 | ↓ | | ↓ | ↓ | 52 | | | | | |

Table 12

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 10 | 1700 | 6 | 30 | 69 | | 50 | Imidazolines | 1 | 0.7 | Yes | Bad (≥ 100 μm) | Yes | Hard |
| Sample 11 | 1700 | ↓ | 34 | ↓ | | ↓ | ↓ | 3 | 0.8 | ↓ | ↓ | ↓ | ↓ |
| Sample 12 | 1700 | ↓ | 38 | ↓ | | ↓ | ↓ | 5 | 1.0 | No | Good (≤ 50 μm) | Little | Easy |
| Sample 13 | 1700 | ↓ | 42 | ↓ | | ↓ | ↓ | 9 | 1.2 | ↓ | ↓ | ↓ | ↓ |
| Sample 14 | 1700 | ↓ | 46 | ↓ | | ↓ | ↓ | 17 | 1.6 | ↓ | ↓ | ↓ | ↓ |
| Sample 15 | 1700 | ↓ | 50 | ↓ | | ↓ | ↓ | 29 | 1.9 | ↓ | ↓ | ↓ | ↓ |
| Sample 16 | 1700 | ↓ | 54 | ↓ | | ↓ | ↓ | 45 | | | | | |
| Sample 17 | 1700 | ↓ | 58 | ↓ | | ↓ | ↓ | 70 | | | | | |

Table 13

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 20 | 2000 | 6 | 30 | 69 | | 50 | Imidazolines | 1 | 0.7 | Yes | Bad (≥ 100 μm) | Yes | Hard |
| Sample 21 | 2000 | ↓ | 34 | ↓ | | ↓ | ↓ | 4 | 0.7 | No | Good (≤ 50 μm) | Little | Easy |
| Sample 22 | 2000 | ↓ | 38 | ↓ | | ↓ | ↓ | 6 | 1.0 | No | Good (≤ 50 μm) | Little | Easy |
| Sample 23 | 2000 | ↓ | 42 | ↓ | | ↓ | ↓ | 11 | 1.2 | ↓ | ↓ | ↓ | ↓ |
| Sample 24 | 2000 | ↓ | 46 | ↓ | | ↓ | ↓ | 20 | 1.6 | ↓ | ↓ | ↓ | ↓ |
| Sample 25 | 2000 | ↓ | 50 | ↓ | | ↓ | ↓ | 37 | | | | | |
| Sample 26 | 2000 | ↓ | 54 | ↓ | | ↓ | ↓ | 64 | | | | | |
| Sample 27 | 2000 | ↓ | 58 | ↓ | | ↓ | ↓ | 90 | | | | | |

Table 14

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 30 | 2400 | 6 | 30 | 69 | | 50 | Imidazolines | 2 | 0.7 | Yes | Bad (≥ 100 μm) | Yes | Hard |
| Sample 31 | 2400 | ↓ | 34 | ↓ | | ↓ | ↓ | 5 | 0.7 | No | Good (≤ 50 μm) | Little | Easy |
| Sample 32 | 2400 | ↓ | 38 | ↓ | | ↓ | ↓ | 10 | 1.0 | No | Good (≤ 50 μm) | Little | Easy |
| Sample 33 | 2400 | ↓ | 42 | ↓ | | ↓ | ↓ | 16 | 1.2 | ↓ | ↓ | ↓ | ↓ |
| Sample 34 | 2400 | ↓ | 46 | ↓ | | ↓ | ↓ | 31 | | | | | |
| Sample 35 | 2400 | ↓ | 50 | ↓ | | ↓ | ↓ | 47 | | | | | |
| Sample 36 | 2400 | ↓ | 54 | ↓ | | ↓ | ↓ | 77 | | | | | |
| Sample 37 | 2400 | ↓ | 58 | ↓ | | ↓ | ↓ | 115 | | | | | |

Table 15

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 40 | 3000 | 6 | 30 | 69 | | 50 | Imidazolines | 4 | 0.5 | Yes | Bad (≥ 100 μm) | Yes | Hard |
| Sample 41 | 3000 | ↓ | 34 | ↓ | | ↓ | ↓ | 7 | 0.8 | No | Good (≤ 50 μm) | Little | Easy |
| Sample 42 | 3000 | ↓ | 38 | ↓ | | ↓ | ↓ | 15 | 1.1 | No | Good (≤ 50 μm) | Little | Easy |
| Sample 43 | 3000 | ↓ | 42 | ↓ | | ↓ | ↓ | 30 | | | | | |
| Sample 44 | 3000 | ↓ | 46 | ↓ | | ↓ | ↓ | 50 | | | | | |
| Sample 45 | 3000 | ↓ | 50 | ↓ | | ↓ | ↓ | 84 | | | | | |
| Sample 46 | 3000 | ↓ | 54 | ↓ | | ↓ | ↓ | 131 | | | | | |
| Sample 47 | 3000 | ↓ | 58 | ↓ | | ↓ | ↓ | 200 | | | | | |

Table 16

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet | Film Density [g/cm$^3$] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 50 | 2000 | 2 | 42 | 69 | | 50 | Imidazolines | 2 | 1.0 | Yes | Bad (≥ 100 μm) | Yes | Hard | 3.8 |
| Sample 51 | ↓ | 4 | ↓ | ↓ | | ↓ | ↓ | 4 | 1.1 | No | Good (≤ 50 μm) | Little | Easy | 3.8 |
| Sample 52 | ↓ | 6 | ↓ | ↓ | | ↓ | ↓ | 11 | 1.2 | No | Good (≤ 50 μm) | Little | Easy | 3.6 |
| Sample 53 | ↓ | 8 | ↓ | ↓ | | ↓ | ↓ | 20 | 1.3 | No | Good (≤ 50 μm) | Little | Easy | 3.4 |
| Sample 54 | ↓ | 10 | ↓ | ↓ | | ↓ | ↓ | 35 | | | | | | |

Table 17

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet | Surface Roughness Ra[μm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 60 | 2400 | 6 | 42 | 77 | | 50 | Imidazolines | 3 | 1.2 | Yes | Bad (≥ 100 μm) | Yes | Hard | 0.55 |
| Sample 61 | ↓ | ↓ | ↓ | 74 | | ↓ | ↓ | 8 | 1.3 | No | Good (≤ 50 μm) | Little | Easy | 0.59 |
| Sample 62 | ↓ | ↓ | ↓ | 69 | | ↓ | ↓ | 16 | 1.3 | No | Good (≤ 50 μm) | Little | Easy | 0.62 |
| Sample 63 | ↓ | ↓ | ↓ | 66 | | ↓ | ↓ | 20 | 1.4 | No | Good (≤ 50 μm) | Little | Easy | 0.91 |
| Sample 64 | ↓ | ↓ | ↓ | 63 | | ↓ | ↓ | 33 | | | | | | |

Table 18

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet | Surface Roughness Ra[μm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 70 | 2400 | 6 | 42 | 77 | | 50 | Imidazolines | 36 | | | | | | |
| Sample 71 | ↓ | ↓ | ↓ | 74 | | ↓ | ↓ | 28 | 1.4 | No | Good (≤ 50 μm) | Little | Easy | 0.59 |
| Sample 72 | ↓ | ↓ | ↓ | 69 | | ↓ | ↓ | 23 | 1.4 | No | Good (≤ 50 μm) | Little | Easy | 0.62 |
| Sample 73 | ↓ | ↓ | ↓ | 66 | | ↓ | ↓ | 14 | 1.3 | No | Good (≤ 50 μm) | Little | Easy | 0.91 |
| Sample 74 | ↓ | ↓ | ↓ | 63 | | ↓ | ↓ | 3 | 1.3 | Yes | Bad (≥ 100 μm) | Yes | Hard | 0.60 |

Table 19

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet | PET Release Force [mN/cm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 80 | 2000 | 6 | 42 | 69 | | 0 | Imidazolines | 12 | 1.1 | No | | Little | Hard | 35 |
| Sample 81 | ↓ | ↓ | ↓ | ↓ | | 10 | ↓ | 12 | 1.1 | No | Good (≤ 50 μm) | Little | Easy | 25 |
| Sample 82 | ↓ | ↓ | ↓ | ↓ | | 30 | ↓ | 12 | 1.2 | No | Good (≤ 50 μm) | Little | Easy | 20 |
| Sample 83 | ↓ | ↓ | ↓ | ↓ | | 50 | ↓ | 12 | 1.2 | No | Good (≤ 50 μm) | Little | Easy | 16 |
| Sample 84 | ↓ | ↓ | ↓ | ↓ | | 80 | ↓ | 12 | 1.2 | No | Good (≤ 50 μm) | Little | Easy | 14.00 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 85 | ↓ | ↓ | ↓ | ↓ | | 100 | ↓ | 11 | 1.3 | No | Good (≤ 50 μm) | Little | Easy | 10.00 |
| Sample 86 | ↓ | ↓ | ↓ | ↓ | | 150 | ↓ | 10 | 1.3 | Yes | | | | Unmeasurable |

Table 20

| | Polymerization Degree | Resin Amt [php] | Pigment Conc. [wt%] | Butyralation Degree [mol%] | Acetalization Degree [mol%] | Plasticizer Amt [php] | Antistatic Agent Kind | Viscosity [Pa·s] (at 8[1/s]) | Print Thickness [μm] | Hanging of Paste | Stacking Property (Stacking Precision) | Sheet Erosion | Release Property of Sheet | Static Electrocity Amt [kV] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 90 | 2000 | 6 | 42 | 69 | | 50 | *1 | 12 | 1.1 | No | Good (≤ 50 μm) | Little | Easy | 12 |
| Sample 91 | ↓ | ↓ | ↓ | ↓ | | ↓ | *2 | 12 | 1.2 | No | Good (≤ 50 μm) | Little | Easy | 11 |
| Sample 92 | ↓ | ↓ | ↓ | ↓ | | ↓ | *3 | 12 | 1.2 | No | Good (≤ 50 μm) | Little | Easy | 13 |
| Sample 93 | ↓ | ↓ | ↓ | ↓ | | ↓ | *4 | 12 | 1.2 | No | Good (≤ 30 μm) | Little | Easiest | 4 |
| Sample 94 | ↓ | ↓ | ↓ | ↓ | | ↓ | None | 12 | 1.2 | No | Bad (≥ 100 μm) | Little | Hard | 36.00 |

*1 polyethylene glycol
*2 polyalkylene glycol derivative based surfactant
*3 carboxylic acid amidine salt based surfactant
*4 imidazoline based surfactant